a third transistor coupled between the first terminal and a second supply.

A1 cont

15. [(New)] The circuit of claim 14 further comprising:

a fourth transistor coupled between the first supply and a second node;

a fifth transistor coupled between a second node and a third node, wherein a control electrode of the fifth transistor is coupled to the first terminal; and

a sixth transistor coupled between the third node and the second supply.

16. [(New)] The circuit of claim 15 further comprising:

a seventh transistor coupled between the first supply and a fourth node; and

an eighth transistor coupled between the fourth node and the third node, wherein a control electrode of the eighth transistor is coupled to a second terminal of the sensor.

17. [(New)] The circuit of claim 15 wherein the first transistor is PMOS, the second transistor is PMOS, the third transistor is NMOS, the fourth transistor is PMOS, the fifth transistor is NMOS, and the sixth transistor is NMOS.

18. [(New)] The circuit if claim 14 wherein the sensor has a resistance that varies depending on an analyte to which the sensor is exposed.

19. [(New)] A circuit for an analyte detection system comprising:

a plurality of sensor sites, each of the sensor sites comprising material having regions of a nonconductive organic material and conductive material, wherein each of the sensor sites provides an output signal that indicates changes to an electrical property in the presence of an analyte; and

autozeroing amplifiers coupled to receive the output signals of the sensor sites, wherein the autozeroing amplifiers adapt out low frequency components of the sensor output signals.

20. (New) The circuit of claim 19 further comprising:

floating gate devices coupled to the autozeroing amplifiers that store analog values representative of the changes in the electrical property from the sensor sites.

A1 cont

21. (New) The circuit of claim 20 wherein the analyte detection system uses the analog values stored in the floating gate devices to determine the presence of the analyte.

22. (New) An analyte detection system comprising a sensor on an integrated circuit, the sensor comprising:

a first sensor site comprising first material having regions of a nonconductive organic material and a conductive material, and

a second sensor site comprising second material having regions of a nonconductive organic material and a conductive material,

wherein an electrical property in each of the sensor sites changes in the presence of an analyte.

23. (New) The analyte detection system of claim 22 wherein the sensor further comprises:

a third sensor site comprising third material having regions of a nonconductive organic material and a conductive material.

24. (New) The analyte detection system of claim 23 wherein the analyte detection system identifies the analyte in response to changes in the electrical properties in each of the first, second, and third sensor sites.

25. (New) A circuit for an analyte detection system comprising:

an array of sensor sites, wherein each of the sensor sites comprises material having regions of a nonconductive organic material and a conductive material,

A1 cont

and wherein each of the sensor sites provides an output signal that indicates changes to an electrical property in the presence of an analyte; and

a first multiplexer coupled to rows of the sensor sites; and

a second multiplexer coupled to columns of the sensor sites.

26. [(New)] The circuit of claim 25 wherein:

a rows address is input into the first multiplexer to select a row of the sensor sites so that data is output from the sensor sites of the selected row; and

a column address is input into the second multiplexer to select a column of the sensor sites so that data is output from the sensor sites of the selected column.

27. [(New)] The circuit of claim 25 further comprising:

a plurality of resistors coupled between each of the sensor sites in the array.

28. [(New)] The circuit of claim 25 wherein the array of sensor sites further comprises:

a first sensor site comprising a first material having regions of a nonconductive organic material and a conductive material; and

a second sensor site comprising a second material having regions of a nonconductive organic material and a conductive material.

29. [(New)] A method of analyte identification comprising:

receiving data from a plurality of sensor sites formed on an integrated circuit, wherein sensor material in each of the sensor sites has regions of a nonconductive organic material and a conductive material, and wherein the sensor provides changes to an electrical property in the presence of an analyte; and

identifying the analyte as belonging to a class of analytes.

30. [(New)] The method of claim 29 wherein identifying the analyte further comprises:

providing output signals from the sensor sites into a neural network classifier that identifies the analyte as belonging to the class of analytes.

31. (New) The method of claim 30 wherein the neural network comprises a feed-forward network.

32. (New) The method of claim 30 wherein the neural network is trained using back-propagation.

33. (New) The method of claim 30 wherein the neural network classier uses perturbative learning.

34. (New) The method of claim 29 wherein identifying the analyte further comprises:

storing output signals from the sensor sites in an analog memory.

35. (New) A method of forming an analyte detection sensor on a substrate, the method comprising:

forming a first conductive layer over the substrate;

forming a insulating layer over the first conductive layer;

patterning and etching a sensor well in the first conductive layer; and

forming a sensor material in the sensor well, wherein the sensor material has an electrical property that changes in the presence of an analyte.

36. (New) The method of claim 35 further comprising:
forming a second conductive layer over the insulating layer.

37. (New) The method of claim 36 further comprising:
forming a passivation layer over the second conductive layer.

38. (New) The method of claim 35 wherein:

A1 cont

3317

the sensor material comprises regions of a nonconductive organic material and a conductive material.

A1
sub
B1

39. [(New)] The method of claim 35 wherein forming a sensor material in the sensor well further comprises:

applying a fluid to the sensor well using a jet system.